IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Yoshikiyo Tanaka et al.
Serial No.: 10/540,033
Filed: January 23, 2008
Group Art Unit: 1795
Examiner: WU, SHEAN CHIU
For: NEMATIC LIQUID CRYSTAL COMPOSITION AND LIQUID CRYSTAL DISPLAY ELEMENT THAT USED THE COMPOSITION

DECLARATION UNDER 37 C.F.R §1.132

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

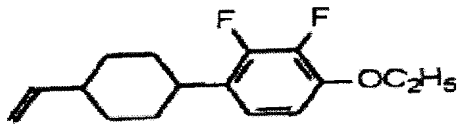
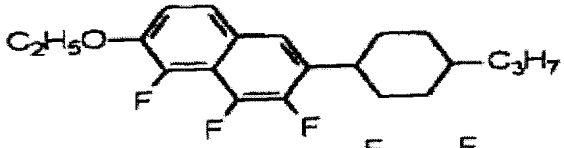
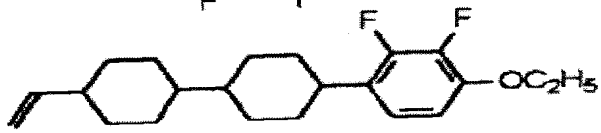
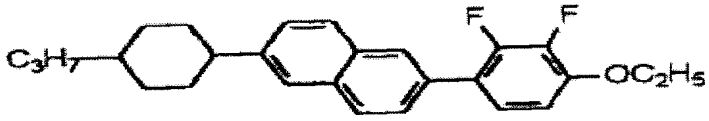
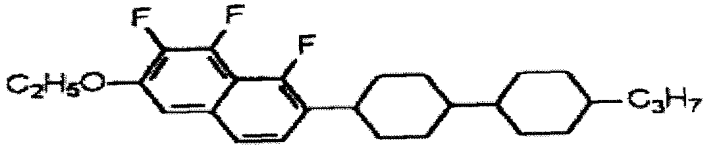
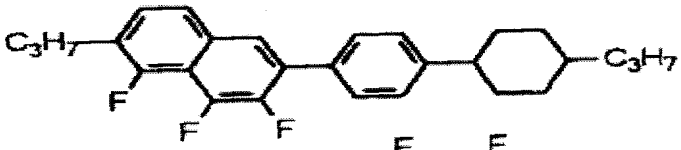
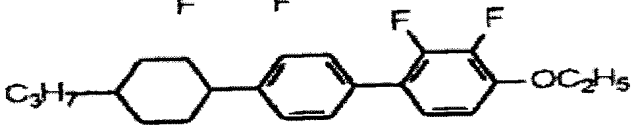
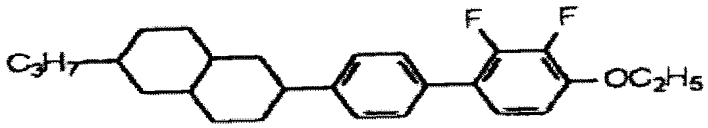
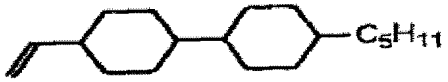
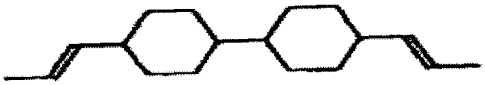
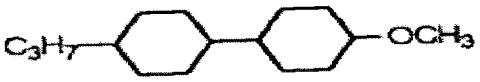
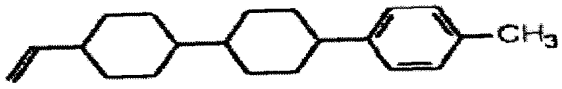
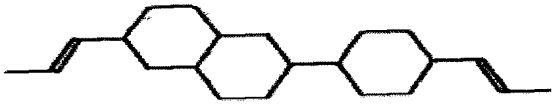
I, Yoshikiyo Tanaka, a citizen of Japan and having a residing at 3-10-4-4D-102, Utsukushigaoka, Yotsukaido-shi, Chiba-ken, Japan, declare and state:

1. THAT, I am one of the inventor of the invention as claimed in the above-referenced application and accordingly I am familiar with the specification and claims which comprise that application.

2. THAT, in order to show that since the composition of claims 1 to 3 has the unique feature, the composition of the present invention has unique effects which are not obtained by the composition of JP'354, the following comparative experiments 1 to 3 were conducted.

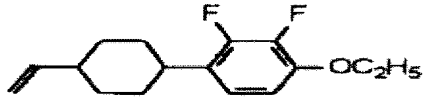
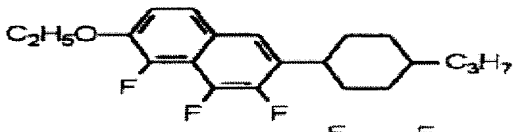
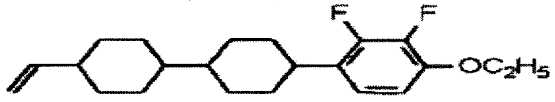
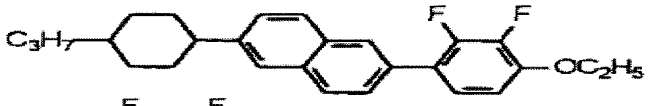
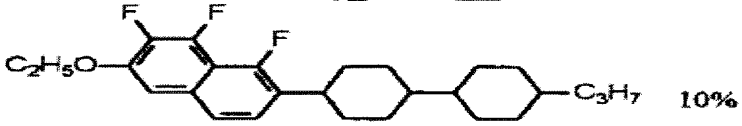
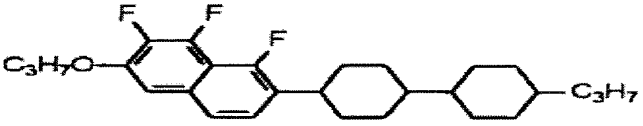
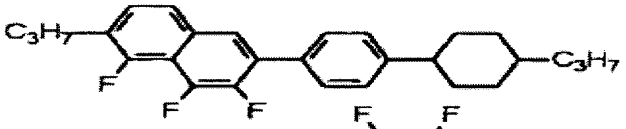
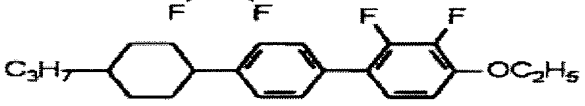
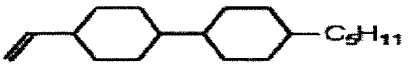
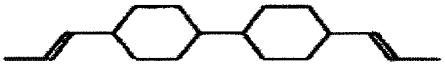
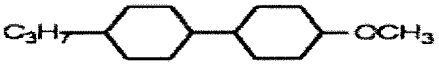
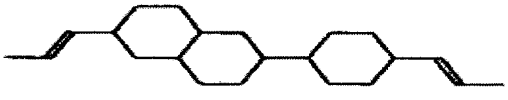
Comparative Experiment 1

The liquid crystal composition containing the following compounds was prepared. That is, the composition (103) of JP'354 was prepared and nematic phase-isotropic liquid phase transition temperature (T_{N-I}), viscosity (η), and dielectric constant anisotropy ($\Delta\varepsilon$) of the prepared composition were measured. The results are shown in Table 3.

(IIC)		5%	(1-0301)
(IA)		10%	(1-0302)
(IIC)		5%	(1-0303)
		10%	(1-0304)
(IIB)		10%	(1-0305)
		10%	(1-0306)
		5%	(1-0307)
		5%	(1-0308)
(III)		15%	(1-0309)
(III)		10%	(1-0310)
(III)		5%	(1-0311)
(III)		5%	(1-0312)
		5%	(1-0313)

Comparative Experiment 2

The liquid crystal composition containing the following compounds was prepared. In Comparative Experiment 2, in order to satisfy the essential feature 7 (increase the content of the compound (IIB) at 5%), the compound (1-0308) was not added, and a new compound (IIB) was added. Then, the properties were measured similarly to Comparative Experiment 1. The results are shown in Table 3.

(IIC)		5%	(1-0301)
(IA)		10%	(1-0302)
(IIC)		5%	(1-0303)
		10%	(1-0304)
(IIB)		10%	(1-0305)
(IIB)		5%	Newly added
		10%	(1-0306)
		5%	(1-0307)
(III)		15%	(1-0309)
(III)		10%	(1-0310)
(III)		5%	(1-0311)
(III)		5%	(1-0312)
		5%	(1-0313)

Comparative Experiment 3

The liquid crystal composition containing the following compounds was prepared. In Comparative Experiment 3, in order to satisfy the essential feature 7 (increase the content of the compound (IIB) at 10%), the compound (1-0308) was not added, the content of the compound (1-0304) was decreased at 5%, and new compounds (IIB) were added. Then, the properties were measured similarly to Comparative Experiment 1. The results are shown in Table 3.

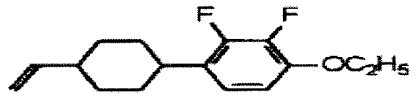
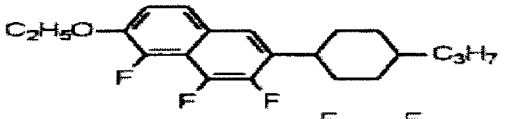
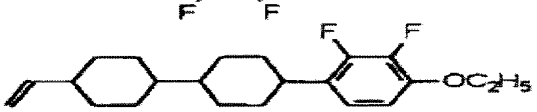
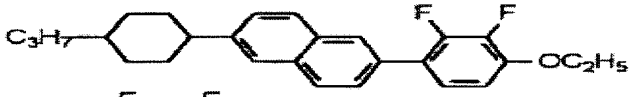
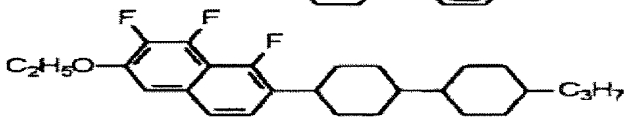
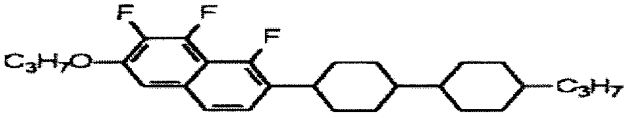
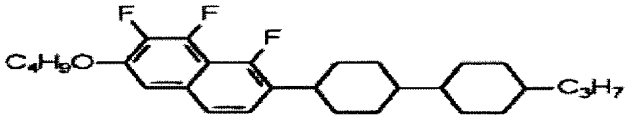
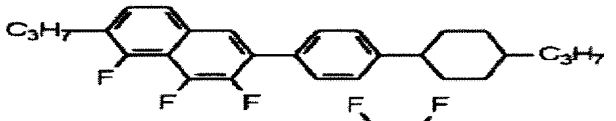
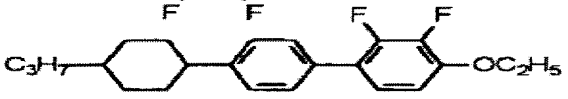
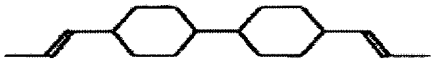
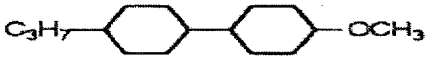
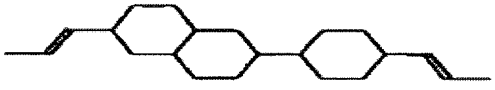
(IIC)		5%	(1-0301)
(IA)		10%	(1-0302)
(IIC)		5%	(1-0303)
		5%	(1-0304)
(IIB)		10%	(1-0305)
(IIB)		5%	Newly added
(IIB)		5%	Newly added
		10%	(1-0306)
		5%	(1-0307)
(III)		15%	(1-0309)
(III)		10%	(1-0310)
(III)		5%	(1-0311)
(III)		5%	(1-0312)
		5%	(1-0313)

Table 3

	Total content of (IA)+(IIB)+(IIC)	T_{N-I} (°C)	η (mPa·S)	Δε
Comparative Experiment 1	30%	109.3	32.8	-7.0
Comparative Experiment 2	35%	111.0	29.7	-7.9
Comparative Experiment 3	40%	111.2	28.4	-8.7

It is clear that the compositions in Comparative Experiments 2 and 3 which have the feature 7 have lower viscosity and larger dielectric constant anisotropy than those of the composition in Comparative Experiment 1 which does not have the feature 7.

It is clear from the results of Comparative Experiments 1 to 3 as well as the comparison between Examples 1 to 3 and Comparative Example 2 in the present description that the composition having the feature 7 of the present invention has unique effects which are not obtained by JP'354.

3. THAT, I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein upon information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

This 26 day of November, 2009

Yoshikiyo Tanaka

Yoshikiyo Tanaka